DOCUMENT RESUME

ED 067 243 SE 014 501

TITLE	Environment, Teacher Manual, Junior High, Idea I, Land.
INSTITUTION	Environmental Education Project, Grafton, Ill.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	[72]
NOTE	58p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Environmental Education; Instructional Materials; *Land Use; Learning Activities; Natural Resources; *Secondary Grades; *Teaching Guides; Units of Study (Subject Fields)
IDENTIFIERS	Elementary Secondary Education Act Title III; ESEA Title III

ABSTRACT

The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about land, teacher resource information and student material are combined to form a teacher's manual for use in the junior high grade levels. Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of land and its uses. Major topics of discussion range from plants and animals associated with soil to litter, control measures, and resource use. Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 067243

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

ENVIRONMENT

JUNIOR HIGH
Idea I
Land

TEACHER MANUAL

Title III
ESEA

"Operation Survival Through
Environmental Education"

Environmental Education Project

Box 122

Grafton, Illinois 62037

Phone 618-786-3313

FILMED FROM BEST AVAILABLE COPY

ENVIRONMENTAL IDEAS

FOR THE STUDENT

-Land-

Contents

Introduction

Action 1 "Around, Around It Goes..."
- A. Everything Is Interrelated
- B. Experiment With Aspirin?
- C. Where Does Man Fit In?

Action 2 Put It Back!
- A. Compost Ecology!
- B. Bugs and Crawlers and Things
- C. Pests, Pests, Pests!

Action 3 Up Up and Away!
- A. The Making of a City!
- B. Hometown, U.S.A.!

Action 4 A Throw Away Society?
A. Reduce! Reuse! Recycle!
B. Eco-Action Guide
C. Stash Your Trash

Action 5 "Let's Go on a Field Trip!"
A. Facts or Concepts?
B. Where Do We Go?
C. How Do We Teach Concepts?

Action 6 "A Resource Key to Open the Mind"
A. Move Upward with the Vertical File
B. Enough for Each Student
C. Those Who Know
D. "I See and I Remember..."

I N T R O D U C T I O N

to

ENVIRONMENT Idea I Land

JUNIOR HIGH SCHOOL RESOURCE UNIT

The Title III, Environmental Education Project Center is providing your class with the following materials to teach a unit on land.

Student Manuals - 1 per student
Teacher Manual - 1
Supplementary Materials (as requested by the classroom teacher)

It is the project's intention to provide guidelines for the teacher and student to cooperatively plan the approach and content to be used during the course of study. All or part of the material can be used after evaluating the needs of the students.

The Environmental Education Project is evaluated by meeting objectives as outlined in the original project proposal. The resource units are written to meet these project objectives with additional material deemed necessary by the project staff, area teachers and administrators, and local environmental concerns.

A summary of the project objectives is provided to inform you of the areas being evaluated concerning the land unit. When using the curriculum materials, we urge you to teach toward these objectives.

- decrease in leaf burning
- decrease in use of trash burning barrels
- decrease in burning off areas of vegetation cover on fields
- decrease in use of pesticides in the homes, the gardens, and the fields
- decrease in the number of pounds of litter on a 50 foot section of Wood River Creek
- increase in use of litter bags in automobiles

- increase in the purchase of soft drinks in returnable containers

- increase in classroom use of films and filmstrips on environmental education

- increase in books and magazines relative to environmental problems checked out of school libraries and other publications relative to environmental education

Students and families of students involved in the project are evaluated on the basis of the above stated objectives. Any different approach that you and/or your students might conceive that will further develop these objectives will be most welcome at the Project Center.

A concept-activity file is constantly being formulated at the Project Center to supplement the resource unit. Additional activities should be evaluated and used to increase motivation and interest depending on the students' background.

The concepts as stated in the original proposal are further stated in the field trip section. These concepts are primarily concerned with the land unit. Additional concepts should be developed to meet the needs of the individual teacher and students at the appropriate grade level.

Behavioral objectives are necessary to devise a method of evaluation and proper instruction. The following behavioral objectives are listed as a basis to follow in the teaching of the land unit. Additional objectives should be devised by the teacher as they apply to the individual needs of the students.

1. Students will list ways man misuses his natural resources.

2. Students will list possible solutions for man's misuse of natural resources.

3. Students will design and explain the construction and use of a compost pile.

4. Students will list all items that can be recycled that are presently being thrown into the trash burning barrel and/or garbage can.

5. Students will make a composite drawing of beneficial and harmful organisms that are found in the soil.

6. Students will design and carry through an experiment illustrating the concept that plant growth is dependent on the quality of the soil.

7. Students will list natural predators for controlling insect pests.

8. Students will write a short essay concerning the importance of or need for zoning in their community.

A pre-test and a post-test must be given to each student. Included are a student test, which may be duplicated by the teacher, and a teacher's answer sheet.

After completion of the pre- and post-test, please grade and fill in the testing information as indicated on the teacher evaluation form.

The teacher's manual includes the actual student guide plus guidelines for the teacher to use while instructing students. Actions 5 and 6 are for your use in conducting field trips and determining what resources you want to use.

Not included in the teacher's manual are the transparency masters and the charts/forms for student use. These items are included in the teacher packet of supplementary materials. This arrangement will allow you to make multiple copies to distribute to your students. You are invited to obtain a teacher packet on a loan basis from the Title III Center. Our telephone number is 618-786-3313.

ENVIRONMENTAL IDEAS

FOR THE STUDENT

-Land-

Teacher's Answer Key

Grade the student responses using the following key. Look for key words or phrases and be flexible. Point values are placed in parenthesis before the question. Tabulate the results of the pre- and post-test and submit to the Title III Center on the teacher evaluation form.

(10) 1. Design an experiment to show that plant growth is dependent on the quality of the soil.

GERMINATE SEVERAL BEAN SEEDS AND TRANSPLANT TO DIFFERENT SOILS: POOR QUALITY (NO HUMUS), MEDIUM QUALITY (SOME HUMUS), AND GOOD QUALITY (ABUNDANT HUMUS).

(10) 2. Describe the necessary steps one would have to take to find the natural controls for certain pests.

IDENTIFICATION OF THE PEST WOULD BE THE FIRST STEP. THEN CONDUCT RESEARCH TO FIND THE NATURAL CONTROLS, OR EXPERIMENT TO SEE IF A VARIETY OF METHODS ARE EFFECTIVE.

(10) 3. In the column on the left, list the beneficial organisms found in the soil and in the columns on the right those organisms that are harmful.

BENEFICIAL ORGANISMS	HARMFUL ORGANISMS
FUNGI	FUNGI
MITES	MITES
PROTOZOANS	PROTOZOANS
BACTERIA	BACTERIA
MOLES	MOLES
INSECT LARVAE	INSECT LARVAE
ROTIFERS	
EARTHWORMS	

(10) 4. You are planning to help your family construct and maintain a compost pile in your backyard. Describe how you would do this.

ANY TYPE OF CONTAINER OR FENCE IS SUFFICIENT WHEN CONSTRUCTING A COMPOST PILE. ALL MATERIALS SHOULD BE MULCHED BEFORE PLACING IN COMPOST PILE. MAINTAIN THIS PILE BY TURNING AND ADDING LIME PERIODICALLY. NOTE: CONSULT THE HANDOUT ON COMPOSTING FOR A COMPLETE ANALYSIS.

(10) 5. Are zoning regulations beneficial to a community? Why?

FACTS AND EXAMPLES OF THIS VALUE JUDGMENT MIGHT BE:

a. BENEFICIAL
   1. PROVIDES QUIET RESIDENTIAL, RECREATIONAL, EDUCATIONAL, MEDICAL, AND SHELTER CARE AREAS
   2. EASY ACCESS TO THE ABOVE AREAS
   3. RESERVES AREAS OF HISTORICAL IMPORTANCE
   4. CONSIDERS THE ASSETS AND LIABILITIES OF NATURAL CONDITIONS
   5. PROVIDES A PLAN FOR COMMUNITY GROWTH

b. DETRIMENTAL
   1. HARMFUL TO THE SMALL, COMMUNITY BUSINESS
   2. MAY REQUIRE ADDITIONAL HIGHWAYS AND ASPHALT PARKING LOTS
   3. MAY PREVENT THE DEVELOPMENT OF PRIVATE RECREATIONAL SITES
   4. MAY HINDER THE DEVELOPMENT OF INDUSTRY
   5. COST MONEY TO ADMINISTER.

(10) 6. Give a typical example of cluster zoning.

THE GROUPING OF HOMES IN A RESIDENTIAL AREA SO THAT THERE IS A COMMONLY OWNED AREA OF OPEN SPACE. PREFERABLY STUDENTS WILL BE ABLE TO SIGHT AN EXAMPLE IN THEIR COMMUNITY. MOST APARTMENT COMPLEXES AND SUBURBS RESEMBLE CLUSTER ZONING.

(10) 7. How can cities or counties insure that land is managed properly?

GOVERNMENT MAY INSURE PROPER MANAGEMENT OF LAND BY:

a. ZONING
b. BUYING THE LAND
c. BUYING AN INTEREST IN THE LAND;e.g. SCENIC EASEMENT

(30) 8. Houston, Texas had a garbage problem. The city had no way to get rid of thousands of tons of garbage a week. The old incinerator couldn't keep up with the growing population and the city dump was almost filled up.

The city council decided to make some of the garbage into compost (KOM-post), rotted organic matter. The compost could be sold as a fertilizer for lawns, farms, and gardens. This seemed to be a useful, money-saving plan for solving part of the problem.

Which of the items below could Houston compost? Describe ways to handle the remaining items that would result in the least amount of waste or pollution. Or describe a way to prevent the items from becoming waste.

a. spoiled food, vegetable peels, and left-overs

TREATMENT: COMPOST

b. bottles, jars, and other glass

TREATMENT: RECYCLE THROUGH GLASS MANUFACTURING COMPANIES

c. newspapers and magazines

TREATMENT: SHRED AND COMPOST, OR BUNDLE AND RECYCLE THROUGH PAPER COMPANIES

d. plastic bags, wrappers, and plastic bottles

TREATMENT: INCINERATE OR BURY AT A LANDFILL

e. pulled weeds, grass clippings, and leaves

TREATMENT: COMPOST

f. metal cans and buckets

TREATMENT: RECYCLE THROUGH SALVAGE OPERATIONS AND METAL MANUFACTURING COMPANIES

ENVIRONMENT

Idea I
Land

Action I

"Around, Around It Goes..."

Everywhere we look we see natural resources being used. Many natural resources are being used wisely. However, many natural resources are being misused. Could this misuse be caused by a lack of understanding of the complex interrelationship that occurs in nature?

A. Everything Is Interrelated

It is difficult to understand all the cycles that occur in nature unless you study them in detail. The diagram that follows is a simplified illustration of some of the cycles that occur in nature. Study this diagram by following the arrows. For a better understanding, you might want to research a specific area and discuss in detail your findings. Don't hesitate to use as many resource materials as you can.

B. Experiment With Aspirin?

To further emphasize the importance of cycles in nature, let's see how the iron cycle works.

Label twelve (12) baby food jars, 1 through 12. Fill the jars three-quarters with water.
Put two aspirins in each even-numbered jar.
Add the materials shown in the chart.

Container Number	Add To Each Container
1 and 2	Nothing
3 and 4	Medium nails, 5
5 and 6	Powdered granite, rock phosphate, or limestone, 1 tablespoon
7 and 8	Pulverized rock, 1 tablespoon
9 and 10	Soil, 1 tablespoon
11 and 12	Cigarette ashes, 1 tablespoon

Shake the jars and leave them tightly sealed for one to two weeks.

The odd-numbered containers are the controls; for example, container number 9 has soil and water and nothing should happen. However, number 10 has soil, water and aspirin. A chemical reaction should take place by changing color.

Salicyclic acid is found in aspirin. When salicylic acid reacts with iron a pink, red, or purple color is formed.

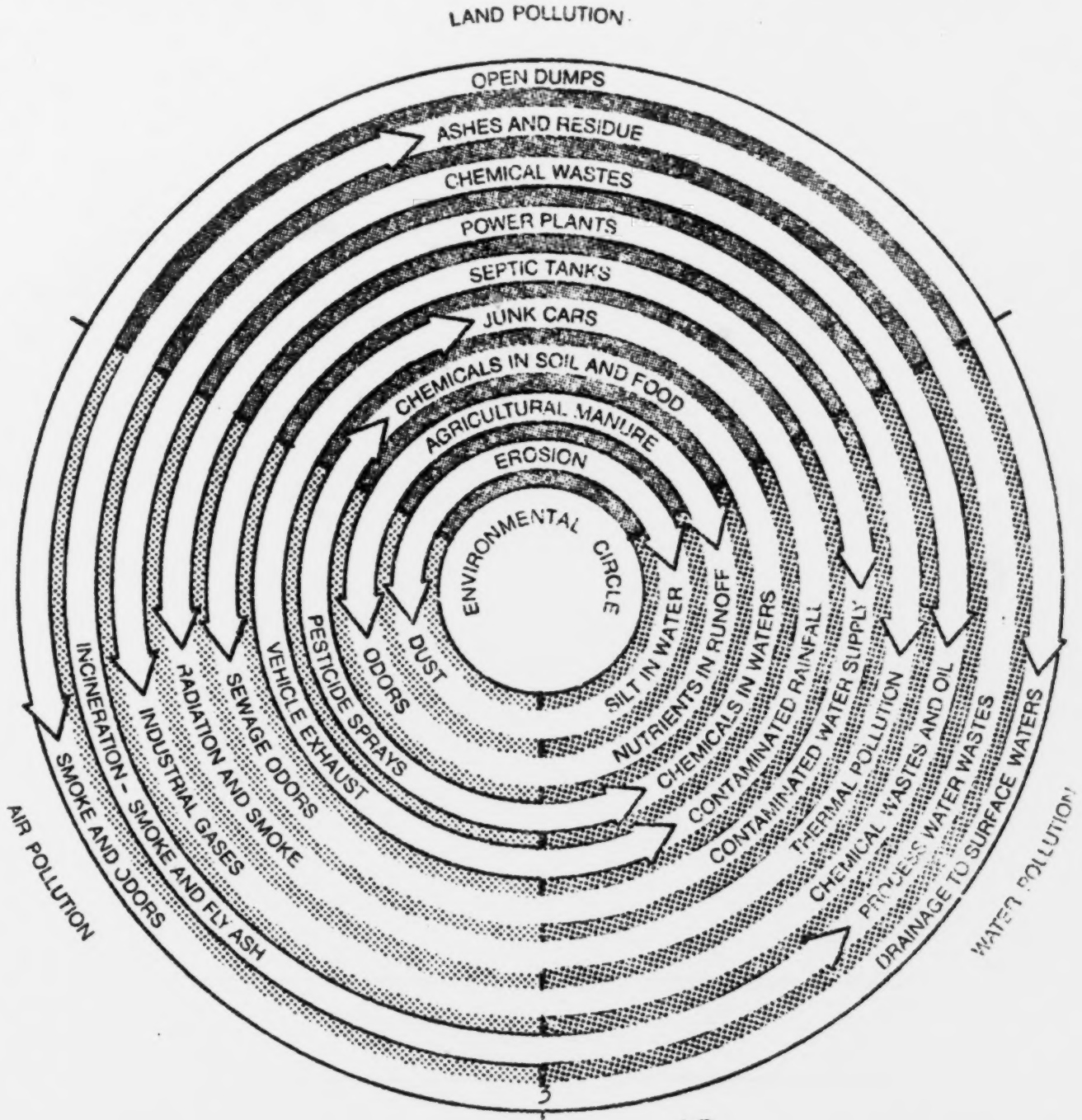
Iron is a mineral that is used by plants. Plants and animals cannot develop and function properly without iron. Plants take this iron from the soil through their root systems. When plants and animals die and decompose, the iron returns to the soil.

After one or two weeks, observe the reactions that have occured in each container.

1. What was the purpose of containers 1 and 2?
2. What was the purpose of containers 3 and 4?
3. What substances that you used contain iron? (A pink, red, or purple color indicates iron is present.)
4. Which substance has the most iron? (The darker the color, the more iron that is present.)
5. What is the value of this experiment?
6. Draw an example of the iron cycle.

C. Where Does Man Fit In?

Investigate one specific cycle to observe what effect man has had on this cycle, beneficial and/or harmful to the environment. Report to the class your findings. You may want to write a news commentary and report to the class this way. Use pictures, slides, magazine articles, or any method that you want to make your report.



TEACHER'S GUIDE

ACTION I

Part A: The total cycle presented is available as a transparency with three overlays. Reproduce the mimeograph sheets on the transparency film, or let your A-V coordinator do it for you. You may want to use felt-tipped pens to color various areas for attractiveness.

Part B: This iron cycle experiment is interesting because of the color change that students enjoy. You may want to divide the class into workable groups and compare the results.

The reactions that occur in each container are shown in the chart. The degree of color darkness depends on many factors. However, most reactions should be basically the same.

Container Number	Specific Reaction
1	No color change
2	No color change
3	Rusty color
4	Definitely pink or red
5	No color change
6	Pink or red
7	No color change
8	Pink or red
9	No color change
10	Pink or red
11	No color change
12	Pink or red

Compare the color change with container number 4. Iron and salicylic acid will form iron salicylate, the pink, red, or purple color. Minerals, soil, rock, and ashes contain iron.

You may also try different substances for their iron content.

Answers to questions 1 thru 6 are:

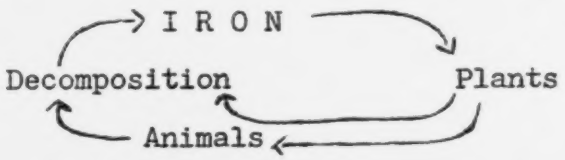
1. The controls show that iron is not present in sufficient quantity to form a chemical reaction with salicylic acid.

2. We know that nails are made of iron which rusts in water. Number 4 is the control for all even-numbered containers.

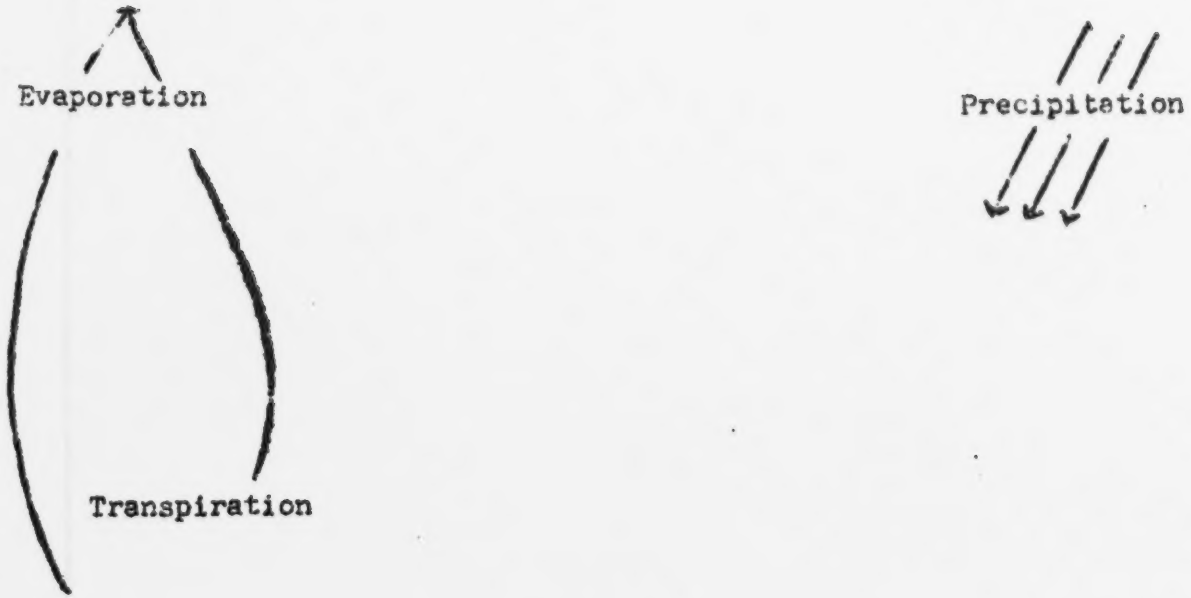
3. Numbers 4, 6, 8, 10, and 12 all contain iron.

4. The nails should show the darkest color change.

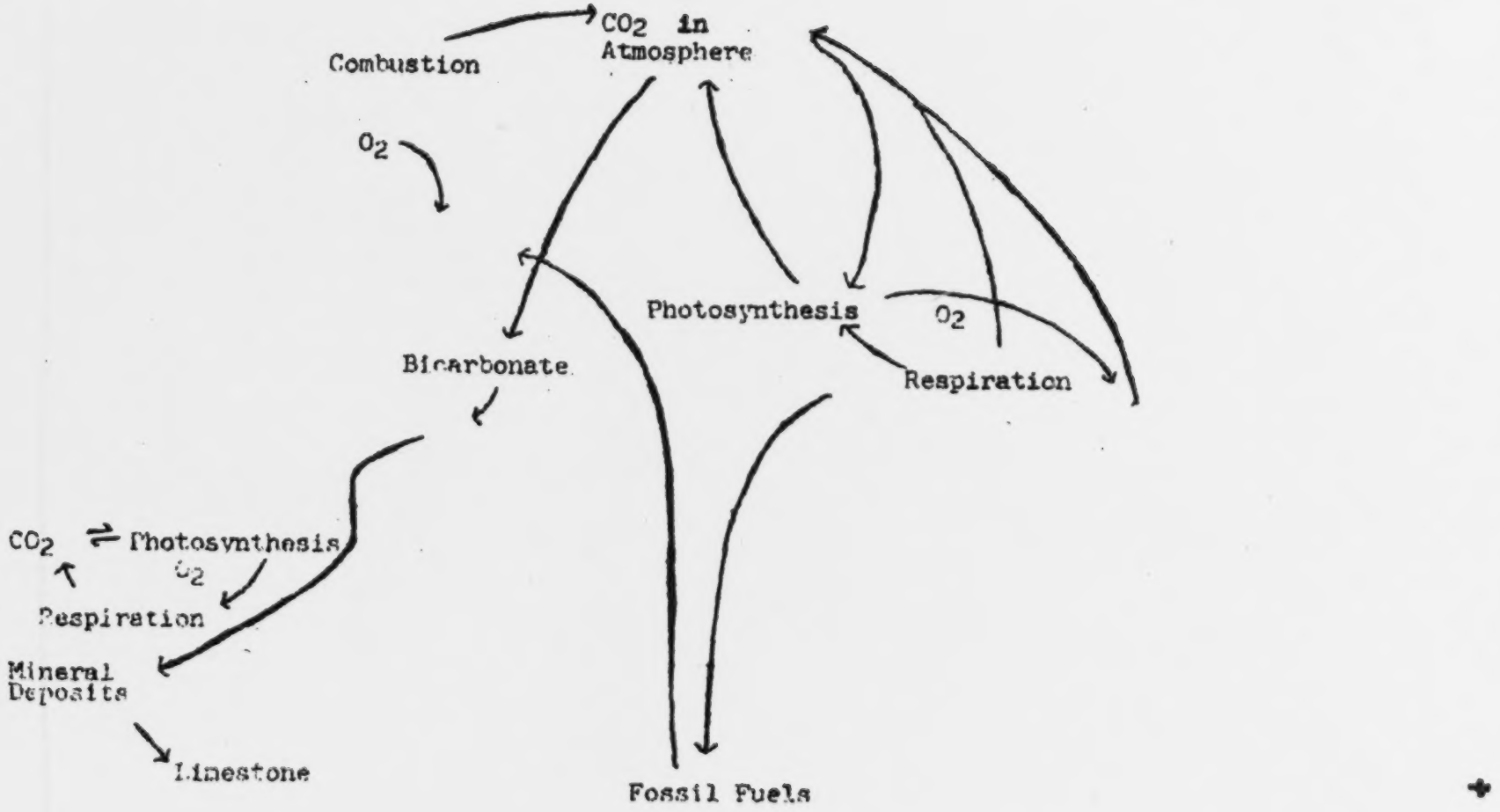
5. The value is to illustrate an example of a cycle that occurs in nature to form a better understanding of the interrelationship of living and non-living things.

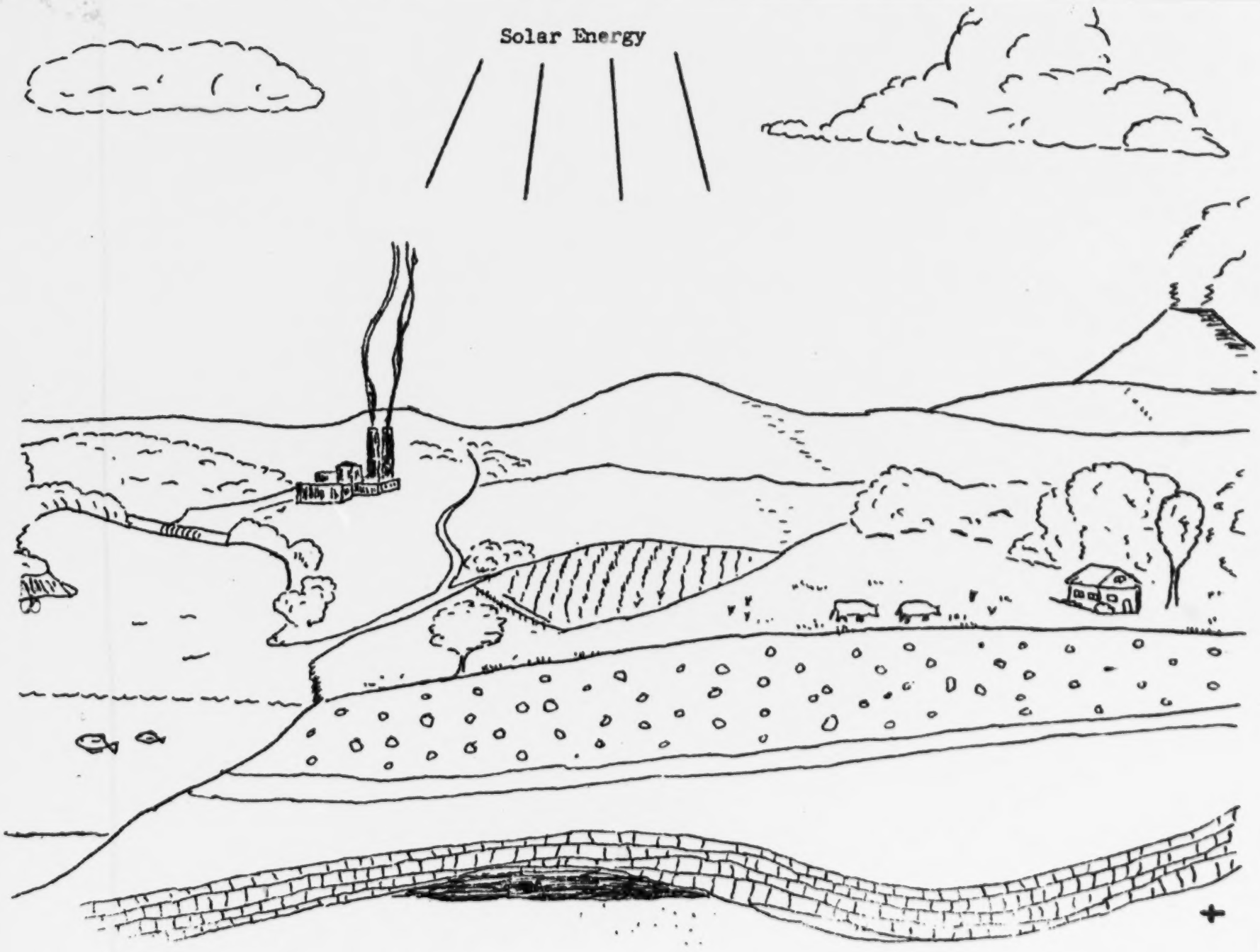
6. 

Part C: The ability of your students will determine the depth that you will want your students to get involved in studying cycles. Many textbooks, as well as resource books in your library, contain the individual cycles for study purposes. For an in-depth study, assign or let a group of students choose one particular cycle and tie in man's relationship with the cycle. For example, man upsets the carbon cycle by burning leaves (increases CO_2 in the atmosphere and prevents organic matter from returning to the soil). Man upsets the nitrogen cycle by concentrating farm animals and allowing nitrogen waste to run-off the ground into streams and rivers. Challenge the students by asking for positive alternatives in the solution of many problems that exist concerning the upset of cycles that occur in nature.


Evaporation
Precipitation
Transpiration
Runoff
Ground Water

Lightning Fixation
Volcanic Action
N2 in Atmosphere
Decay
Urea
Ammonia
Nitrite
Nitrate


Combustion
CO_2 in Atmosphere
O_2
Photosynthesis
O_2
Respiration
Bicarbonate
CO_2 ⇌ Photosynthesis
O_2
Respiration
Mineral Deposits
Limestone
Fossil Fuels


Solar Energy

ENVIRONMENT Idea I Land

Action 2

Put It Back!

Some materials that we are now throwing into the trash-burning barrel can make an excellent compost to build up the soil in yards and gardens. What's so great about composting and why shouldn't we keep throwing materials into barrels?

A. Compost Ecology!

Composting is the best way to recycle certain waste materials. Therefore, it prevents added air pollution from burning the trash, and prevents water pollution when dumped in creeks, rivers, and lakes.

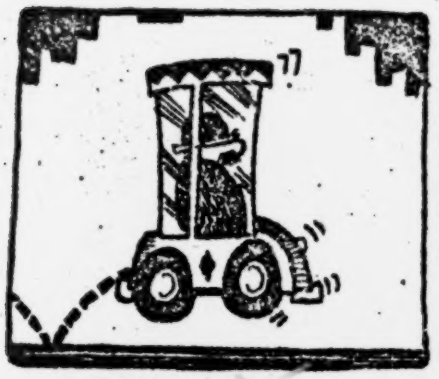
1. What materials that are now going into your trash-burning barrel could be recycled in a compost pile?

2. Design a compost heap container. What are some requirements in order to prevent odor and animal pests?

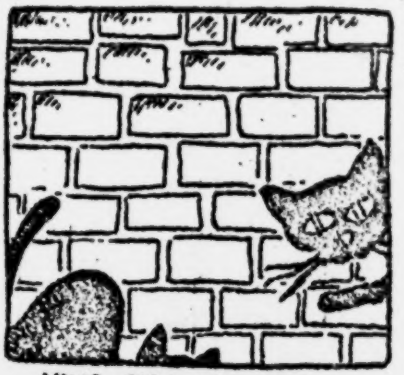
3. Outline the procedures to be followed in putting back what we have taken from nature through the use of a compost pile.

4. How can the product of a compost be used?

★it all gets back to compost★

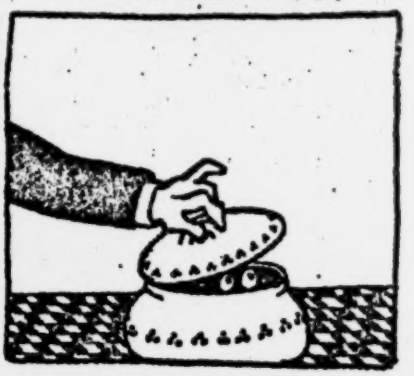


DERBY HATS.



YOUR SISTER'S CATS.

BEDBOARD, BEDPOSTS, FRAME AND SLATS.



ALL THE THINGS YOU LOVE THE MOST.

EVEN TREES ALONG THE COAST.

ARE DESTINED TO BECOME... COMPOST!

Organic Gardening and Farming

B. Bugs and Crawlers and Things

There are a tremendous number of living things in the soil that act as soil conditioners. The earthworm is only one.

1. What are the helpful things the earthworm does for the soil?

2. How can we help the earthworm in the fall prepare for the first freeze of the season?

3. Many soil organisms help condition the soil. Research and discover some of these organisms. Tell how they help condition the soil.

4. Make a composite drawing showing the beneficial and the harmful organisms that are found in the soil.

The presence of animals and plants in the soil is not the only thing necessary to have good soil. Rocks, minerals, air and water are also very important. When you have a combination of organic and inorganic matter, you will have a better quality soil. However, an increase in organic matter usually increases the productivity of the soil.

There are other things you can do to return valuable resource material to the soil. You can mulch your leaves in the fall and they will add valuable nutrient material to your lawn. You can also obtain free sludge from your local sewage treatment plant and spread it over your lawn as fertilizer. Used properly, there is no smell and you do not have to buy commercial fertilizer.

C. Pests! Pests! Pests!

A common complaint among most people is the pest problem. Pests are found everywhere. The trend now is to use pesticides for everything.

Pesticides should be used only when some animal or weed pest threatens your health or a valuable crop. REMEMBER: Many times a pesticide kills beneficial plants and animals along with the intended pest.

What is the alternative to control pests? Use <u>biological control</u>. For example:

Insect predators - one insect eats another
Natural controls - plants that repel insects
Mulching - keeping the weeds out by mowing
Cultivation - mechanical control of weeds
Competition - good plants that crowd out the plant pests

Other experimental methods of pest control do exist.

Three different activities that help compare chemical controls and natural (biological) controls are found on the next few pages. You may want to perform all or part of any activity. Decide what approach you want to follow after a discussion with the entire class.

ACTIVITY I

Bring the following three items to class: a roll of sticky fly paper, a can of insecticide, and a natural predator like a praying mantis or a ladybug. CAUTION: Avoid using insecticide **in the** classroom.

Answer the following questions:

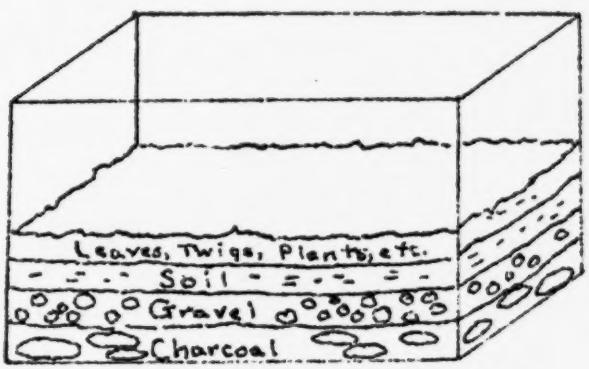
1. What could these three objects be used for in the classroom or home?
2. Explain the function of each.
3. Which object would do a fast and complete job? Which one is slower but still completes the job?
4. What method is most economical?
5. Why is a good understanding of ecology necessary before one uses hard pesticides such as DDT?
6. Should hard pesticides be replaced with natural enemies (predators)?

ACTIVITY 2

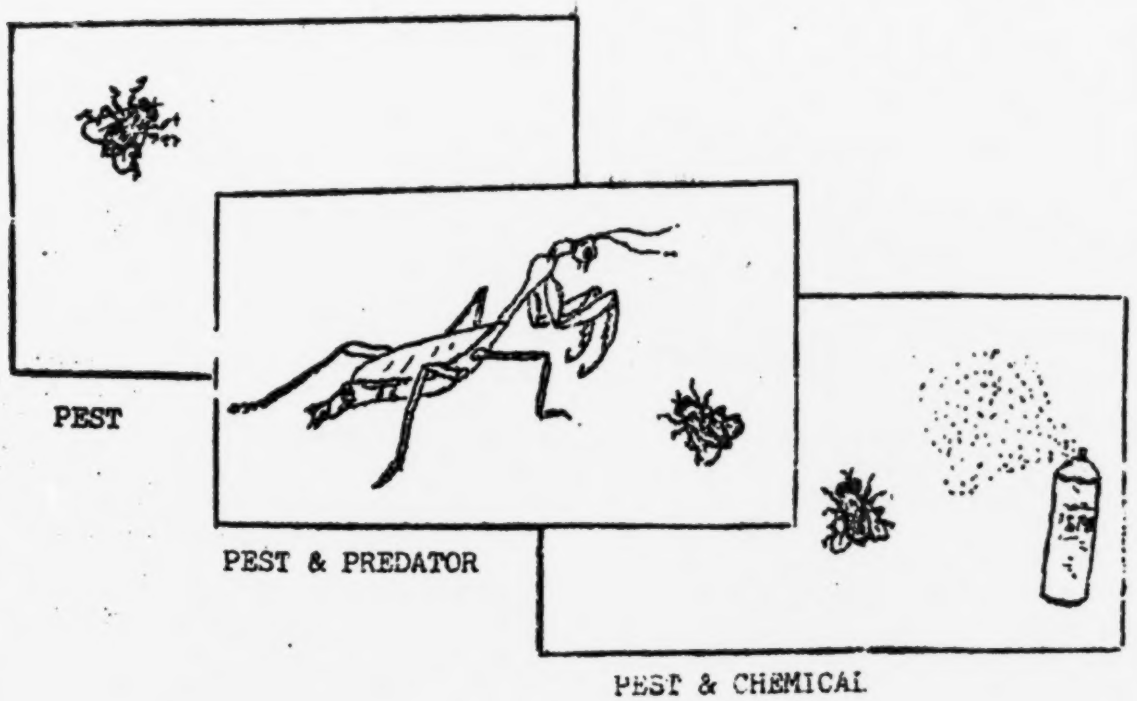
Study the life cycles of several insect pests by providing the insects with a home.

A terrarium is ideal for this purpose.

Experiment with different pests and introduce a predator into the terrarium.



Another terrarium could be constructed so that you could control the pest with chemicals. Use the following model as an example. Devise your own experiments.



Record daily any changes in population and activities in the terraria. Research and discuss the advantages and disadvantages of using biological controls over chemical controls.

ACTIVITY 3

Study predator-prey relationships by conducting a survey of the school yard and/or your home. You will have to do some research in many areas, but it will be worthwhile to understand how biological controls can be extremely helpful in pest control. Your teacher will provide a chart which applies to your chosen area.

You and your teacher will decide how many pests and/or predators you should report about to the class.

After the survey and research on each predator-prey relationship, discuss the advantages and the disadvantages of using biological controls over chemical controls. Also, discuss how you can encourage natural predators to remain in your area to control pests.

If you MUST use chemical pesticides, the National Audubon Society recommends the following list:

NEVER USE	LIMITED USE ONLY
1. DDT	1. Chlordane
2. Aldrin	2. BHC
3. Dieldrin	3. Endosulfan
4. Endrin	4. Toxaphene
5. Heptachlor	

USE ONLY WITH CAUTION
1. Pyrethrum
2. Rotenone
3. Nicotine Sulfate
4. Methoxychlor
5. Sevin
6. Malathion
7. Diazinon
8. Dibrom
9. Guthion
10. Dursban

Evaluate the controls that you use in and around your home. When purchasing pesticides for home use, make sure you use the least dangerous to you and nature.

TEACHER'S GUIDE

ACTION 2

Part A: The handout sheet on composting should provide sufficient information about constructing a compost heap. Either have this sheet duplicated and give each student one copy or use it for your own background. Please direct any questions you might have to the Title III Center, phone 618-786-3313.

The most valuable learning situation in this case is to construct a compost heap on the school property. If this is not possible, encourage students to start one at home. If this is the case, each student should have a copy of the handout on composting.

You might want to use the cartoon as a take-off for other activities. Creative writing or analyzing the content might create an interest for many students. Some students might want to create their own cartoon version.

Part B: Answers to questions about soil organisms.

1. Earthworms condition the soil by improving textures, increasing water absorption, and returning organic matter to the soil.

2. By leaving the grass clippings and mulched leaves on the ground, the freezing process is gradual; therefore allowing the earthworms time to burrow deeper in the ground. Unprotected ground may cause a freeze kill of the earthworms.

3. Worms, insects, fungi, and even moles help condition the soil by burrowing, aiding in decomposition, and returning organic matter to the soil, to name a few.

4. The drawing should include: roundworms, earthworms, grubs, adult insects, insect larvae, bacteria, fungi, green plants, protozoans, and mites.

There are many activities and experiments available in your textbooks and/or resource material that you may want to perform. Another approach would be to let the students devise their own experiment. For example, present them with a concept; such as, plant growth is dependent on the organic content of the soil. Then let them discover for themselves by simply planting several plants in two or three different types of soil.

Attached is an experiment to test the water absorption capacity of soil with different ground cover. Use the porosity test if time and interest is sufficient.

Part C: Some examples of the general classification of biological controls are:

Insect predators - praying mantis eats flies
- ladybug eats aphids

The three activities listed can be started concurrently. However, you may want to use only one or two activities. Extreme caution must be used when handling pesticides. Let the students work in the activities, but you handle the pesticides.

ACTIVITY I

Pictures of the three items can be substituted for the real thing; however it is not as effective.

Possible answers to the questions are:

1. They could be used to kill pests (insects).

2. Fly paper strips attract insects using sweet aroma, then insect sticks to the surface.
Insecticides are chemicals, absorbed into the insect's body, which upset the metabolism of the insect.
Predators feed on insect pests.

3. Chemicals would do the fastest job. The other two methods are slower.

4. Natural controls are most economical because they are free when found in nature.

5. When a possibility exists about upsetting the balance in nature, then there is a problem. Pesticides very easily upset this balance. Therefore an understanding of ecology is necessary to prevent this upset.

6. Hard pesticides should be replaced as much as possible, because hard pesticides will be with us "forever." The replacement could be natural predators or less harmful pesticides.

ACTIVITY 2

The terrarium should be constructed as shown in the diagram. A glass cover should be in place. Gallon jars from your cafeteria can be substituted for the rectangular aquarium.

Let the students experiment with various pests and predators. If it does not work properly, try again.

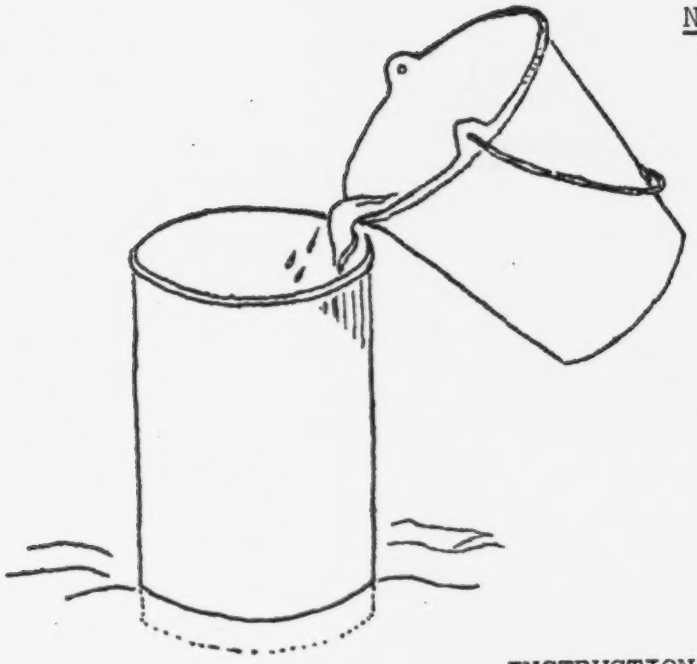
The handout on pests and natural controls would be very useful here so that a different approach could be tried.

ACTIVITY 3

Several books on insects, birds, and other predators should be available in your school library or instructional materials center. You might ask the students to bring copies of Organic Gardening and Farming, or other magazines that deal directly with the content.

The list of chemical pesticides is not intended as a memorization exercise. The students should realize that many harmful chemicals exist, as well as less dangerous ones.

POROSITY TEST



EQUIPMENT

Number Needed	Item Description
7	#10 tin can with both ends cut out. Check with cafeteria.
6	½ gallon milk cartons
1	stop watch or wrist watch with sweep second hand
	Clipboard (s) and paper (s) for records

INSTRUCTIONS

Decide on a number of test locations. Consider some of the following soil types and conditions: Gravel, sand, clay, unmowed ground cover--as along a fence row, (watch for poison ivy), mowed grass, compacted soil (such as a base line on a ball diamond or a well used path).

Insert #10 can into soil at the test location so that water poured into it cannot escape around the bottom edge. Insert into soil about one inch deep. If this is difficult or impossible, build a clay collar around the bottom edge.

List the type of soil and soil conditions on your report form. Using cardboard milk cartons, measure a quantity of water (1 quart or 2 quarts) and then quickly pour it into the #10 can. Using a stop-watch or wristwatch with a sweep second hand, check the amount of time needed for the known quantity of water to be absorbed into the soil. Enter this time on your report form across from the appropriate soil type and soil condition. Using the same amount of water, continue this test at the other previously planned test locations.

ENVIRONMENT Idea I Land

Action 3

Up Up and Away!

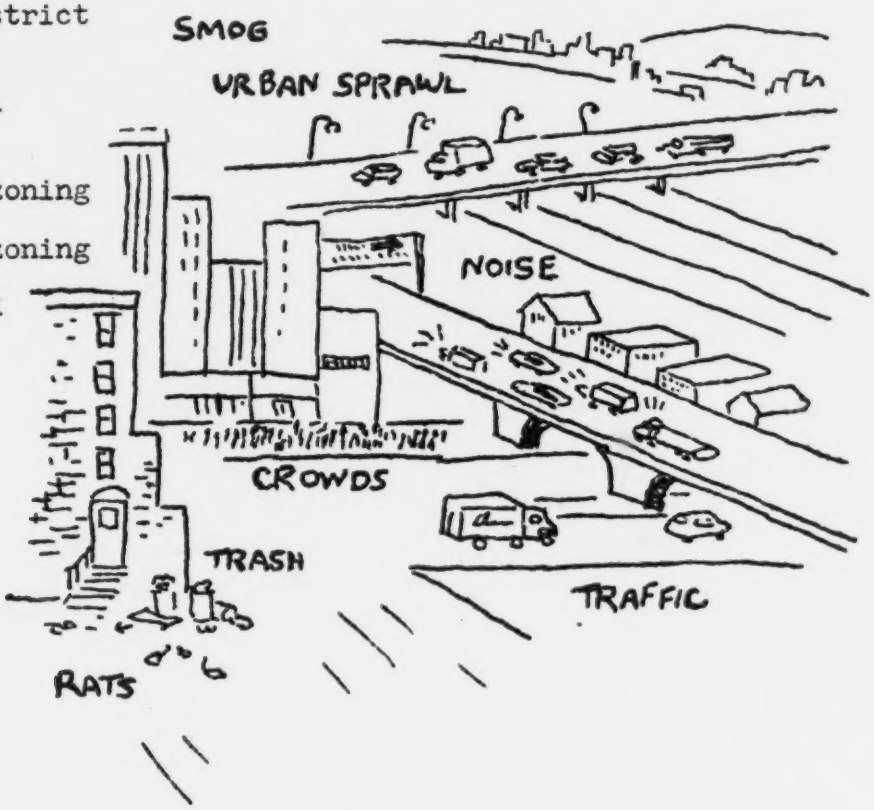
Are you one of the fourteen out of every twenty Americans that fight the traffic and breathe the fumes in a seamy sprawl of steel and concrete canyons? How can we make the most heavily populated areas also the most desirable for living?

A. The Making Of A City

There are two ways a community can act to maintain a quality environment. It can use its legislative power to zone land, or the community can buy the land, or an interest in it, so that it will not be mismanaged.

The first technique occurs more frequently because it is cheaper and effects the entire community. Some types of zoning often found in progressive communities include, among others:

1. flood-plain zoning
2. cluster zoning
3. billboard zoning
4. historic district zoning
5. agricultural zoning
6. open space zoning
7. industrial zoning
8. recreational zoning



The class will be divided into groups and each group will choose a specific type of zoning to research. Find some of the requirements and handicaps involved with each type of zoning. Explain to the class the purpose of this type of zoning and give an example in your own community where it exists and where it is needed. (Often photographs, drawings, and maps are helpful in describing such local areas.) Do you find any areas in which there is a dispute as to the best type of zoning for that vicinity?

B. Hometown, U.S.A.!

Have a person in your class obtain a map of your city and county. Mark these maps with different colored pencils or crayons to show residential areas, industrial and commercial areas, recreational sites, health facilities, educational and cultural areas, and transportation facilities. Devise your own color code and symbols.

Study the completed map and discuss the following questions:

1. Has the community been built according to an overall plan?
2. Is there evidence of proper land usage?
3. Are schools, residential areas, hospitals, and rest homes in quiet, clean neighborhoods.
4. Is solid waste, municipal sewage or industrial waste a problem to the community?
5. Do the number of signs, billboards, and wires detract from the beauty of the community?

6. Are there an adequate number of parks easily accessible for most people?

7. Does a major highway go through a city park?

8. Have areas of historical significance been preserved? Are these areas attractive?

9. Do any additional historical sites need to be preserved?

10. Has time-distance had any effect on the location of medical, commercial, recreational or educational facilities?

11. Does your community have an adequate form of mass transportation?

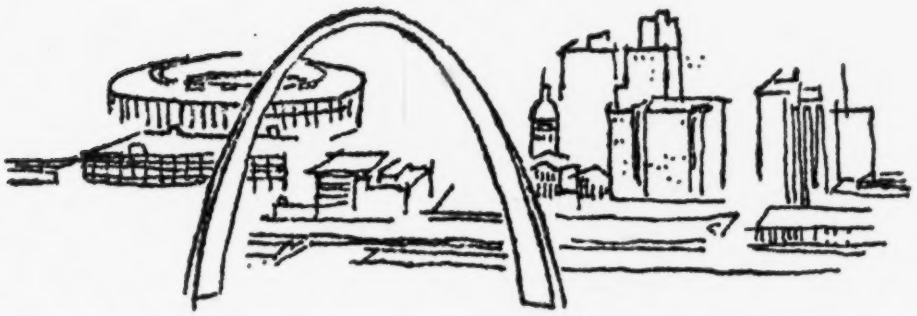
12. What is the history of mass transportation in your community?

13. Are there plans for the development of mass-transit in the near future?

14. Could mass-transit relieve any environmental problems that now exist in your community?

16. Are there plans for future development?

16. Does your community consider the effect on the environment when making decisions?



TEACHER'S GUIDE

ACTION 3

Part A: Here are short explanations of zoning types mentioned in the student manual. These are not the only types of zoning that exist and certainly students should be encouraged to explore other types of zoning.

FLOOD-PLAIN ZONING

Such zoning is a water resource measure to guard these plains against development. These lowlands bordering water courses act as gigantic sponges during frequent flooding.

The Corps of Engineers can be helpful in establishing adequate zoning ordinances governing these areas. It has an active Flood-Plain Management Services program designed to provide needed information and maps free of charge.

CLUSTER ZONING

Previously, communities have restricted the density of development by specifying precise lot sizes. This, however, required extensive amounts of land and asphalt roadways. Under cluster zoning the community still restricts the number of houses a developer may build, but it allows him to group the houses somewhat more tightly and use the excess land for common open space. Who should now own this common land? This zoning also assures that certain areas will be reserved for residences to the exclusion of commercial and industrial concerns.

BILLBOARD ZONING

One of the best ways of conserving a country landscape is to create scenic areas along our highways. To aid in this endeavor the Federal Highway Beautification Act of 1965 provides 100% grants to states for widening and enhancing scenic corridors along the principal highways. Such attempts at beautification are essential where recreation and scenery are a principal industry.

HISTORIC DISTRICT ZONING

State legislation and community support are essential in reserving such areas from commercial development. Under the open space programs of the Department of Housing and Urban Development and through programs of the Department of the Interior, grants in aid may be sought for both acquisition and development of historic districts.

AGRICULTURAL AND OPEN SPACE ZONING

Many times farmers or landowners desire to have areas designated as open space areas. Do not, however, expect this type of zoning to remain indefinitely. It is effective only as long as farmers and landowners desire.

Part B: The teacher will need to divide the class into groups to research the various types of zoning.

Listed below are some additional discussion questions and group activities which may prove beneficial.

1. Discuss the factors affecting the selection of a site to build your city.

2. Discuss some of the major reasons for the community's growth.

3. Obtain a copy of your city or county zoning ordinances. How do they compare with the map developed by the class?

4. If your community does not have zoning regulations, you may want to consider how areas should be zoned.

5. Involve the students in the planning of an ideal community by playing the simulation games: "Mike's World, Your World," or the game "Make Your Own World" in the Coca Cola Ecology Kit. Both may be obtained from the Environmental Education Project Center.

6. Invite a city and county official to speak to your class concerning local zoning ordinances.

ENVIRONMENT Idea I Land

Action 4

A Throw Away Society?

How often do you throw away excess packaging? Do you ever throw things away that you could use or recycle? Do you find that you are taking out the garbage more often than you ever did before? If this is the case, you are a member of the throw away society.

"The ground pollution won't be any worse if you take out one more bag of garbage."

A. Reduce! Reuse! Recycle!

From the following list of consumer goods, bring to school one complete container in which the goods were purchased. Each of you should bring a different container.

Food Products

cereal
milk
crackers
cheese
vegetables
fruit
meat
eggs

Cleaning Agents

furniture wax
window cleaner

Medicine

aspirin
cold remedies
antibiotics

Bathroom Supplies

hair spray
toothpaste
tissue paper
mouthwash

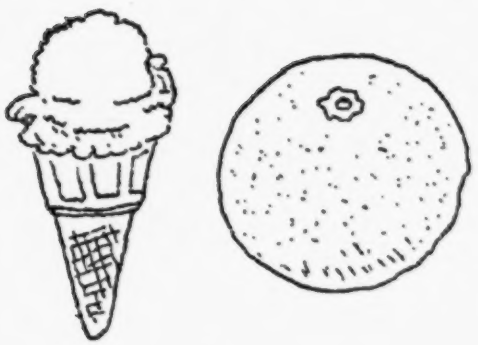
Design a container that would be more economical and less of a threat to the environment. See that your new container meets the following criteria:

--- no excess packaging

--- bulk quantity

--- can be returned, recycled, reused, or is biodegradable

--- economically feasible



Some existing containers already meet the criteria above. For example, an orange shows how nature encloses the fruit in its own biodegradable container. Ice cream cones are ideal because the ice cream comes in bulk containers and you eat the individual container (the cone). How about a fortune cookie? It is the ultimate in packaging. You eat the container.

Use your imagination when designing your container. The only criteria here is that it is in a form to present to the entire class. Suggestions you might want to consider are:

1. Sketch your design on paper.
2. Put your design on a transparency and use the overhead projector.
3. Construct your container from available materials.
4. Find a perfectly suitable container to replace the present container.

Now compare the two containers. Explain to the class how the new container is less dangerous to the environment than the old container.

B. Eco-Action Guide

After deciding what packaging is good or bad for the environment, you should tell others about your results. Try to get classmates, parents, and friends to buy products packaged in acceptable containers. A guide or handbook is an effective method of helping people decide. Avoid using brand names in your guide. It is more important to know what types of containers are acceptable.

The first step in writing a handbook is to decide what content should be included. As an entire class, discuss this area and compile a list of topics to be included. You might want to include: (1) recycling centers, (2) where you can buy milk in returnable containers, (3) a detergent list, (4) what types of packaging to avoid, etc. After the topics have been determined, divide into appropriate groups and write the content for which you are interested.

After content has been written, work in interest groups in the following areas:

Group 1. Correct grammar and evaluate the content for the entire booklet.

Group 2. Decide the best way to present this material in booklet form.

Group 3. Design an attractive cover and diagrams throughout the handbook.

Group 4. Write or type material on Ditto masters to be duplicated.

Group 5. Assemble and distribute the final product.

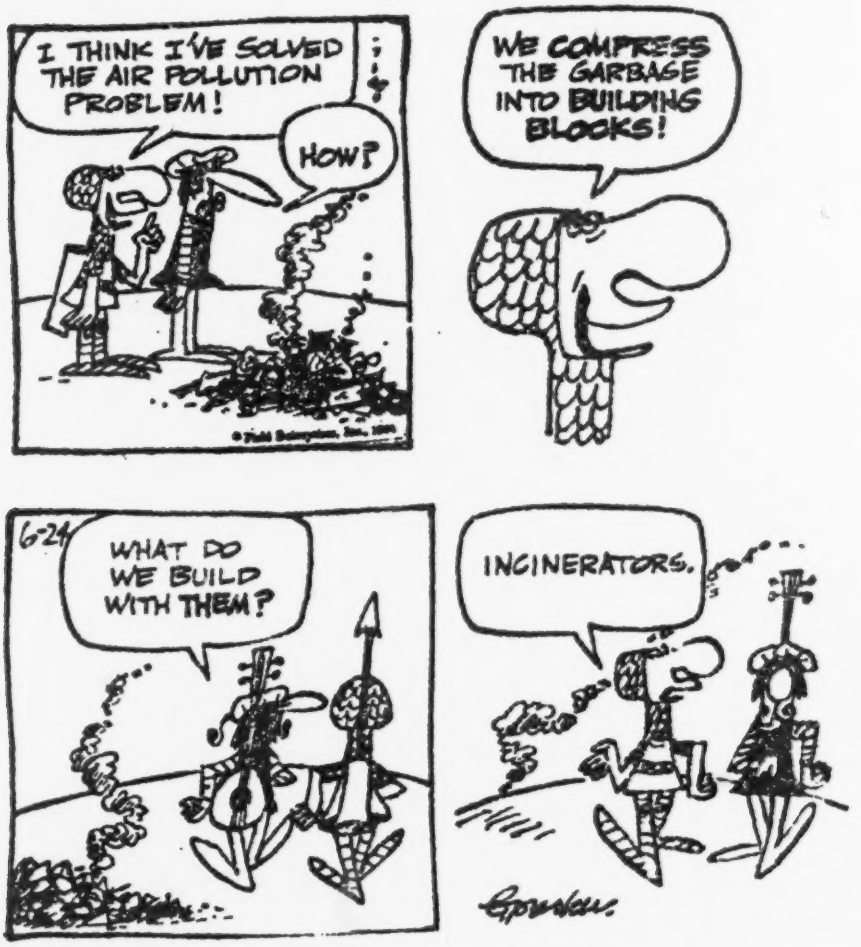
Use your own imagination and creativity in developing this handbook. Remember your parents and friends will be using this guide, so make sure it is factual, correct, and attractive. Set a good example by following the guide yourself at home and school.

C. Stash Your Trash

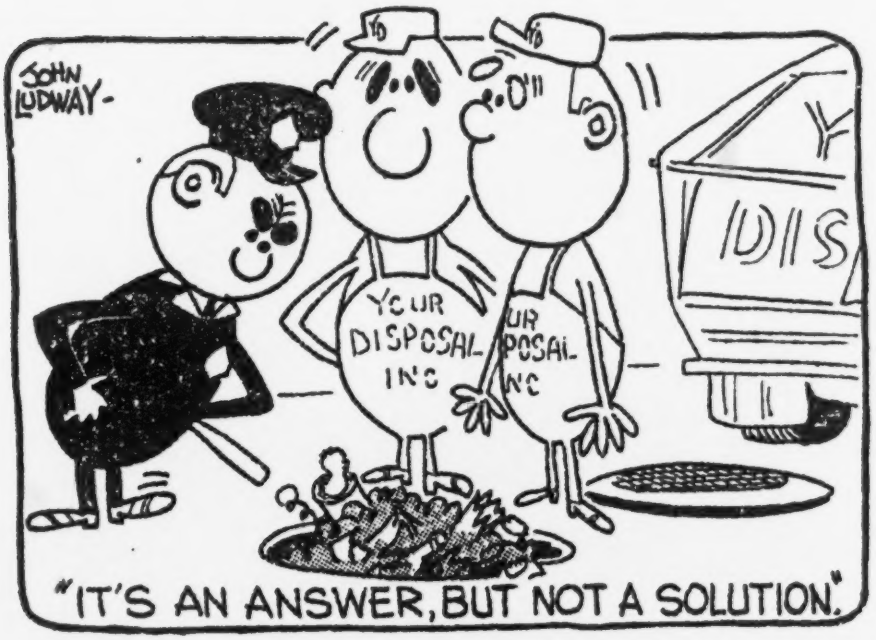
There are many things in your society that cannot be recycled, reused, or composted. And, besides this, many of you still throw away everything possible. The following cartoons are hilarious, but they bring to light a very serious and growing problem about solid waste. Can you look beyond the humor of the cartoon and identify the particular problem that faces our society? Can you give reasons why the problem exists? Can you suggest possible solutions to the problem? Does your community have any of these problems? If so, is the community seeking solutions to these problems? Divide yourselves into groups and have each group select a particular cartoon on which to work. Present your cartoon, analysis of the problem, and possible solutions to the entire class for discussion.

The Wizard of Id — By Parker and Hart

I.


I THINK I'VE SOLVED THE AIR POLLUTION PROBLEM!
HOW?
WE COMPRESS THE GARBAGE INTO BUILDING BLOCKS!
6-24
WHAT DO WE BUILD WITH THEM?
INCINERATORS.

II.



III.

"The average of four and a half pounds of garbage per person doesn't take into consideration people like Howard who leave nothing behind. . . ."

IV.

V.

GRIN AND BEAR IT BY LICHTY

"It's a fine long term investment! . . In a few years after garbage fill, you'll double its value as a prime building lot."

VI.

B. C. by Johnny hart

TEACHER'S GUIDE

ACTION 4

Part A: Encourage the students to bring containers that they feel are not environmentally sound. Use the criteria listed in evaluating their designed container.

Materials necessary for the construction of new containers should be brought to school from home, or that material available in the classroom.

A few examples of excess packaging and a possible correction are:

EXCESS	CORRECTION
cheese-individual slices wrapped in plastic	bulk cheese that you cut yourself
a variety of cereal in small individual boxes	large box of one cereal
no deposit, no return bottles	deposit bottles
pre-made pudding in individual containers	make your own pudding

Part B: There are many handbooks available for evaluating the content, format, and design. Let the students look at the existing handbooks to get ideas.

Do not use brand names. The idea is to provide information to the consumer, so that he can make his own decision. However, it is acceptable to give credit to those doing a good job. You might list names and addresses of recycling centers as well as places that sell milk in returnable containers, or other environmentally acceptable methods.

The group idea is only a suggestion. You may want to use a different approach. Student involvement, to feel a part of the total handbook, is the key idea.

A copy of the handbook might be presented to grocery store managers and buyers for department stores. Have them consider stocking items that are environmentally sound.

Part C: The cartoon idea is a new approach in getting student interest aroused. Let the student be as creative as possible. The six cartoons will allow groups of not more than five or six students in one group.

The following outline will provide quick reference to possible student responses to the cartoons.

1. The Problem of Solid Waste

    a. too much solid waste
    b. continual increase in amount
    c. creates air, water, and land pollution

2. Why the Problem Exists

    a. too many people
    b. change of attitude
    c. change in technology
    d. consumer demand for convenience packaging

3. Possible Solutions of the Problem

    a. complete recycling of waste
    b. sanitary landfill operations
    c. incinerators (non-polluting)
    d. education to change attitudes

ENVIRONMENT Idea I Land

Action 5

"Let's Go on a Field Trip!"

A field trip is to be taken during your teaching of the land unit. The field trip is an integral part of the land unit. It emphasizes the concepts learned, or to be learned, by the students. On-the-spot observation is a valuable learning technique. Consult the "Teachers' Resource Handbook" for field trip dress, discipline, and general instructions.

A. Facts or Concepts?

Mind-filling, factual, see-all field trips have been a traditional approach to the field trip in the past. The question is, "Is the child given any responsibility for learning on his own?" Does he retain more from being spoon-fed facts or from being allowed to learn from his own interest and involvement?

Experience indicates that children learn more when they become personally involved in the learning process. This can be achieved by allowing the child to participate in the initial planning of the field trip, and to select a specific investigation on the field trip for which he will be responsible. These specific investigations will be within the bounds of the concepts to be presented on the field trip and in the unit.

The concepts below are only a few of the many that students should come to understand when learning about the environment. Additional concepts may be emphasized at the teachers' discretion. The concepts to be presented are as follows:

1. Living things are interdependent with each other and with their environment.

2. Man is dependent on the renewable resources for his survival.

3. Soil is a renewable resource.

4. The government is active in the development and management of the land.

B. Where Do We Go?

The above concepts can be illustrated at a number of field sites. The actual field trip site choice should result in a discussion with your students. Let the students feel a part of the final decision. Their interest will be enhanced by your concern over their choices.

Suggested field sites would include:

1. Local wooded area, e.g. Alton ravines; student's farm; or school site nature area
2. City park or county owned property
3. Pere Marquette State Park; Beaver Dam State Park; other nearby state parks

C. How Do We Teach Concepts?

Three options are presented for the teaching of these concepts. These options vary in degree of the student's responsibility for learning. They vary from teacher planning activities for the student to student-teacher planning to total student planning. These options can be combined or used independently. The options are as follows:

1. Teacher Planning for Student

The teacher will present activities to be assigned to students or chosen by the students on a voluntary basis. The students should be encouraged to brainstorm additional activities to enlarge on those being suggested. The only caution would be to contain the brainstormed activities as they apply to the concept being taught. Those activities are listed following this section on teaching options.

2. Student-Teacher Planning

With this procedure the list of concepts is to be presented to the students for class discussion. The discussion should establish an understanding of these concepts. At this point the students should be guided into a brainstorming session to bring out field trip activities and assignments related to the concepts. The teacher, in guiding the development of the field activities may care to provide some direction by giving suggestions of activities as they are listed at the conclusion of this teaching option section.

3. Student Planning

The student is this procedure will be totally responsible for his plan of study of the concepts given to him by the teacher. Initially, the teacher will work with the student in developing a study agreement. The study agreement will cover the following points:

a. title of study
b. questions to be answered in conducting the study
c. resources to be used
d. description of field activity and equipment and supplies
e. method of recording data
f. form the report or summary will take (written-oral-audio & visual)
g. how and who will evaluate the report.

The fulfillment of the field activity may be either on a student self-directed basis on free time or as a part of the class field trip.

Suggested Field Trip Activities

Methods of procedure in fulfilling these activities should be carefully planned and reviewed in preparation for the field experience. Considerations to be made are:

a. equipment or supplies needed to carry out the activity
b. method of recording the data to be gathered
c. method of reporting the data in a meaningful way
d. follow-up activities that will extend and strengthen the concept.

Concept 1: Living things are interdependent with each other and with their environment.

Activity - Instruct students to collect one living thing (invertebrate) that is dependent on "something." Gather after ten minutes and have each student tell the group what he collected and how it is dependent on other living things. Also have each student, or group of students, choose a cycle that occurs in nature and tell the class how the living thing collected fits in with this cycle. Before leaving the area, turn all animals loose and return logs and stones to their original location.

Activity - Survey a plot of ground to study the plants and animals within the plot and the interrelationship that exists. Small amounts of soil, plants, and animals may be taken back to the classroom for further study. A burlese funnel may be constructed to collect minute plants and animals within the soil. A detailed description of how to construct the funnel is found in the Intermediate Land Resource Unit or consult a staff member at the Title III Center.

Concept 2: Man is dependent on the renewable resources for his survival.

Activity - Visit a landfill operation, open dump, or an incinerator. Have a resource person explain the operation. Have students take notes and ask questions. Emphasis should be placed on the amount of solid waste, the types of solid waste, and the lack of recycling that occurs at these disposal sites. Upon returning to the classroom, discuss the possibility of different methods of disposal and recycling. Study your community's method of disposal.

Activity - Clean up a road side dump or similar area. Have students analyze the amount and types of solid waste (litter). Use the material collected to start a recycling center at school or another area. Discuss the different packaging materials that could help decrease or eliminate excess packaging. Also discuss why this problem of litter exists and possible solutions.

Activity - Start a compost heap on the school grounds or individually at home. Use the handout on composting for information on methods of construction. A demonstration on the school grounds would be very helpful by providing techniques the students could follow.

Concept 3: Soil is a renewable natural resource.

Activity - Test the quality of different soils. Use soil testing kits to test the chemical composition of different soil; e.g. barren soil, good topsoil, or clay soil. The Title III Center has equipment for soil study. Ask a staff member or call 786-3313 for information about the availability of this equipment. The plants and animals in the soil and the organic content of the soil also determine the quality of the soil. Consult your textbooks for experiments on soil.

Concept 4: The government is active in the development and management of the land.

Activity - Take an extended trip to a local farm that maintains good conservation practices. Most farm situations are partially maintained by government funds; e.g. grass waterways, ponds and small lakes, and land bank areas. Early arrangements must be made with the farm operator. You should plan to spend one-half day observing the operations.

Activity - Study a local park and/or recreation area maintained by government funds (city, county, state, or federal). Observe proper conservation practices; e.g. tree planting, feeding stations, and drop boxes. Littered areas and location of proper waste receptacles should be observed. You may want to make arrangements with the park manager to have him speak to your group and tour the facilities.

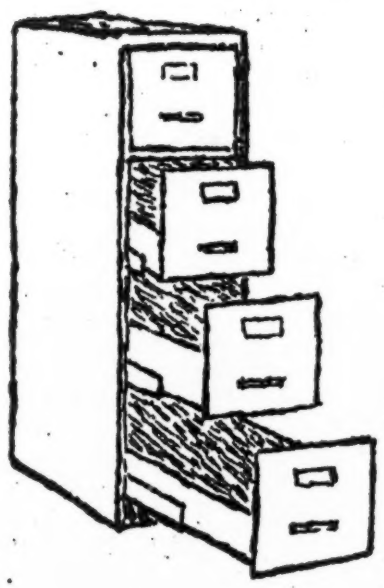
ENVIRONMENT Idea I Land

Action 6

"A Resource Key to Open the Mind"

Often teachers desire additional reading material, visual experiences or discussions to enrich a student's learning experiences. Listed below are materials which may be borrowed from the Environmental Project Center, area resource people, and free films. This listing, however, does not include resources which may be found in local school or public libraries.

A. Move Upward With the Vertical File



The Project Staff has accumulated and filed a number of pamphlets, newspaper clippings and magazine articles which are available to teachers for use as resource material. Teachers may borrow, for two weeks, a maximum of four articles from any one heading in the vertical file. Articles may be obtained by mail, by contacting one of the Project Staff or by calling the Project Center at 786-3313. The following headings appear in the vertical file.

1. Agriculture
2. Agricultural Pollution
3. Community Planning
4. Community Planning - Zoning
5. Conservation - Districts
6. Conservation - Soil
7. Conservation - Wildlife
8. Ecology
9. Forestry
10. Governmental Control - Federal - Pesticides

11. Hunting and Trapping
12. Insect - Control
13. Land
14. Landfill
15. Litter
16. Mines - Waste
17. Natural Resources
18. Pesticides
19. Plastics
20. Population
21. Recreation
22. Recreation - Illinois
23. Recreation - National Parks and Forests
24. Recycling
25. Soil
26. Solid Waste
27. Terrarium
28. Urbanization
29. Wildlife

B. Enough for Each Student

The Project Center also has multiple copies of certain resource materials which may be borrowed by a class. If the teacher desires, and it is possible, each student may study his personal copy of a pamphlet for a maximum of two weeks. Such bulk requests should be directed to the Project Staff.

All of the material listed below was obtained free of charge. The teacher or school librarian may obtain permanent copies for their building or classroom by directing requests to the following agencies.

1. "The Conservation Story, A Background for Understanding Today's Crisis"

   American Education Publications
   Columbus, Ohio

   Booklet includes some history leading up to the present environmental problems including case studies.

2. "Man And His Endangered World"

   Canning L. Bete Co.
   Box 112
   Greenfield, Mass.
   01301

   Price 25¢ each.
   (16¢ each in lots of 100, 10¢ each in lots of 1500)

   Summary of ecological problems.

3. "Eleven Pennies For Better Hunting"

   Wildlife Management Institute
   Wire Bldg.
   Washington, D.C.

C. Those Who Know

The following is a listing of possible resource people and their titles. You may want to contact one of these resource people about the possibility of speaking to your class. You may also wish to contact your local high school for students qualified to speak to your class.

Jersey County

John Pero, Extension Administrator
Cooperative Extension Service, University of Illinois
405 South State, Jerseyville, Illinois Phone: 618-498-4821

Walden Lewis, Area Forester
Illinois Division of Forestry, Department of Conservation
124 West Pearl, Jerseyville, Illinois Phone: 618-498-2828

David Harper, Game and Fish Biologist
Illinois Department of Conservation
142 Robert Street, Jerseyville, Illinois Phone: 618-498-4243

Tom Lamer, District Forester
Illinois Division of Forestry, Department of Conservation
124 West Pearl, Jerseyville, Illinois Phone: 618-498-2828

George Lessig, Fire Warden
Illinois Division of Forestry
124 West Pearl, Jerseyville, Illinois Phone: 618-498-2828

George Threldkeld, District Conservationist
U.S. Department of Agriculture
301 South Jefferson, Jerseyville, Illinois Phone: 618-498-3712

Ray Carter, Soil Conservation Technican
U.S. Department of Agriculture
301 South Jefferson, Jerseyville, Illinois Phone: 618-498-3712

Sue Wright, Park Interpreter
Pere Marquette State Park
Grafton, Illinois Phone: 618-786-3718

Dr. Paul Kilburn, Assoc. Professor of Biology
Principia College
Elsah, Illinois Phone: 618-466-2131

Sally Vasse
Audubon Society
Mark Twain Wildlife Refuge Phone: 618-883-2523

Madison County

Dr. Harry B. Kirchner, Assoc. Professor of Earth Science
Southern Illinois University
Edwardsville, Illinois Phone: 618-692-3620

Paul Hawkins, Madison County Sanitation Officer
Madison County Court House, Edwardsville, Illinois
Phone: 618-656-0913

Dale Sherrard, District Conservationist
U.S. Department of Agriculture
P.O. Box 482, Edwardsville, Illinois Phone: 618-656-4710

Dana Grantham, Soil Scientist
U.S. Department of Agriculture
P.O. Box 482, Edwardsville, Illinois Phone: 618-656-4710

Melvern Allen, Conservation Engineer
U.S. Department of Agriculture
P.O. Box 482, Edwardsville, Illinois Phone: 618-656-4710

Dave Horn, Superintendent of Sanitation
Public Works Department, City of Alton
101 East 3rd. Street, Alton, Illinois Phone: 618-465-4226

Ralph Wandling, Director of Public Works
101 East 3rd. Street, City of Alton, Illinois
Phone: 618-465-4226

Pride Incorporated
Williams and West Broadway, Alton, Illinois
Phone: 618-465-3525

Norman Klueter, Chairman
Madison County Soil and Water District Committee
P.O. Box 482, Edwardsville, Illinois Phone: 618-656-7300

The Following Are Members Of The Alton Environmental Ecological Control Committee.

Dr. J. Edmund White, Head of the Department of Chemistry
Southern Illinois University, Edwardsville, Illinois
Phone: 618-692-2042

Cornell C. Brown, employed at Laclede Steel Co.
1118 Harrison Street, Alton, Illinois
Phone: 618-462-9821

Richard E. Brobst, Chemist at Olin Works
27 Holly Hill, Alton, Illinois
Phone: 618-462-7414

Nick Bono, engineer at WOKZ Radio
3105 Clay Street, Alton, Illinois
Phone: 618-462-0181

Francis Hogan, engineer at Owens-Illinois
3116 Burton, Alton, Illinois
Phone: 618-462-2365

Mrs. Laraine N. Rowse
807 Grove Street, Alton, Illinois
Phone: 618-462-7867

Marvin Mondy, biology teacher at Alton High School
1619 Seminary Road, Alton, Illinois
Phone: 618-462-7164

Robert Busse, Director of Parks and Recreation-Alton
Rock Springs Park, Alton, Illinois
Phone: 618-462-9711

Macoupin County

George Caveny, Macoupin County Board of Supervisors
R.R. Shipman, Illinois
Phone: 618-836-4706

Harley Briscoe
Soil Conservation Service
805 North Broad Street, Carlinville, Illinois
Phone: 217-854-6711

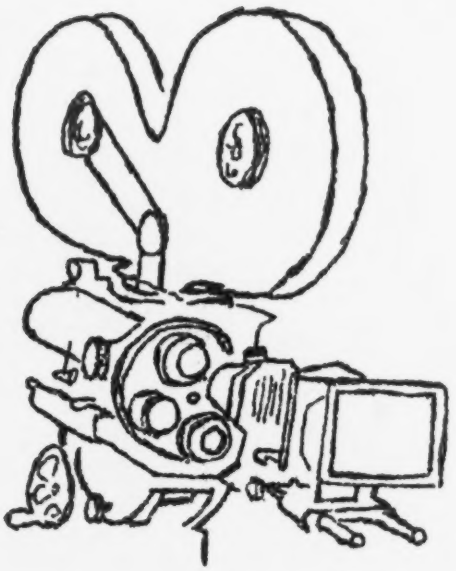
Harold Landon
Agricultural Stabilization and Conservation Service
805 North Broad Street, Carlinville, Illinois
Phone: 217-854-6711

Bill McAllister
Extension Farm Advisor
126 North Broad Street, Carlinville, Illinois
Phone: 217-854-5946

James England, Conservation Officer
Illinois Department of Conservation
R.R. 2 Carlinville, Illinois
Phone: 217-854-6461

Frank Simmermaker, Park Ranger
Illinois Department of Conservation
R.R. 2 Box 61 Plainview, Illinois
Phone: Shipman - 618-836-4871

D. "I See and I Remember..."



The following is a listing of free films which may be obtained if a teacher so desires. The films may be borrowed from the sources given below with the only cost involved being that of return postage. All films are in color except those designated by (*) asterick.

TITLE OF FILM	SOURCE OF FILM	LENGTH
"Soil Conservation District" (What is a Soil Conservation District and how does it help farmers?) 1954	Keystone Steel and Wire Audio Visual Department Peoria, IL 61607	14½ min.
"Conservation and Balance in Nature" (What is man doing to Ecological Systems?)	Environmental Education Specialist. Jefferson Nat'l Expansion Memorial 11 North 4th St. St. Louis, MO 63102	18 min.
"The House of Man... Our Changing Environment" (Compares progress through wasteful methods and through presentation of resources)	Same address as above	17 min.

TITLE OF FILM	SOURCE OF FILM	LENGTH
"A Matter of Time" (Man's impact upon land and the environment)	Environmental Education Specialist. Jefferson Nat'l Expansion Memorial 11 North 4th St. St. Louis, MO 63102	28 min.
"Breaking the Web" (Consequences of changing the world of nature)	Illinois State Museum Audio-Visual Department Spring & Edwards Streets Springfield, IL 62706	11 min.
"Plant-Animal Communities: Interrelationships"	Same address as above	13½ min.
"A Strand Breaks" (Man must follow laws of nature to guard nature's resources.)	Film Loan Service Division of Education Department of Conservation 113 State Office Bldg. Springfield, IL 62706	25 min.
"The Trouble With Trash" (Waste disposal problem)	Modern Talking Picture Service c/o Swank Motion Pictures, Inc. 201 So. Jefferson Ave. St. Louis, MO. 63103	28 min.
"The Farm" (Farm management for maximum wildlife)	Same address as above	28 min.